

WHAT IS CLAIMED IS:

1. A method of producing a decorative molded object which is a resin molded object decorated with a color design image representing a letter, a symbol, a figure, or the like, comprising the steps of:

printing a color design image on an image carrying layer, which is porous and is arranged on a substrate sheet, with an output apparatus that collectively outputs color design data to form a coloring agent layer for displaying the color design image on the substrate sheet;

transferring the coloring agent layer on the substrate sheet onto a resin molded object to be decorated;

peeling the substrate sheet with the transferred coloring agent layer left on the resin molded object to form a color design image layer on the resin molded object; and

curing, after application and deposition onto the color design image layer, a transparent resin liquid to thereby form a transparent resin layer.

2. A method of producing a decorative molded object according to Claim 1, wherein the image carrying layer is composed of a porous material having, as a bonding phase, inorganic fine particles bound with each other with a binder resin.

3. A method of producing a decorative molded object according to Claim 2, wherein the image carrying layer is perforated with many longitudinal pores opening in a direction perpendicular to a plane of the substrate sheet.

4. A method of producing a decorative molded object according to Claim 1, further comprising the step of:

curing the transparent resin liquid, which is an active energy ray curing type resin liquid, by applying an active energy ray to the transparent resin liquid after depositing the transparent resin liquid onto one of the color design image layer and the coloring agent layer.

5. A method of producing a decorative molded object according to Claim 4, further comprising the step of:

leaving, after application, the transparent resin liquid, which is an active energy ray curing type resin liquid, for a predetermined time period determined according to a viscosity of the transparent resin liquid.

6. A method of producing a decorative molded object according to Claim 1, further comprising the step of:

leaving, after application, the transparent resin liquid, which is a two-liquid curing type resin liquid having a viscosity of 1×10^{-3} Pa·s to 20 Pa·s at 25°C, for a time period within a range of 0.1 seconds to 60 minutes determined according to the viscosity of the transparent resin liquid, to thereby complete curing of the two-liquid curing type resin liquid.

7. A method of producing a decorative molded object according to Claim 1, further comprising the step of:

transferring the coloring agent layer onto a back surface of the resin molded object made of one of a transparent resin and a semi-transparent resin.

8. A method of producing a decorative molded object according to Claim 1, further comprising the step of:

forming an coloring auxiliary layer for complementing a color such as a metallic color including a gold color or a silver color or a white

color on one of the resin molded object and the transparent resin layer before or after transferring the coloring agent layer onto the resin molded object.

9. A method of producing a decorative molded object according to Claim 1, wherein the output apparatus for collectively outputting color design data employs an ink jet printing method as its printing method.

10. A method of producing a decorative molded object according to Claim 1, wherein the resin molded object is a key top main body of a key top for a push-button switch.

11. A method of producing a decorative molded object which is a resin molded object decorated with a color design image representing a letter, a symbol, a figure, or the like, comprising the steps of:

printing a color design image on an image carrying layer, which is porous and is arranged on a substrate sheet, with an output apparatus that collectively outputs color design data to form a coloring agent layer for displaying the color design image on the substrate sheet;
curing, after application and deposition onto the coloring agent layer, a transparent resin liquid to thereby form a transparent resin layer;
transferring the transparent resin layer and the coloring agent layer on the substrate sheet onto a resin molded object to be decorated;
and

peeling the substrate sheet with the transferred coloring agent layer left on the resin molded object to form a color design image layer on the resin molded object.

12. A decorative molded object which is a resin molded object

decorated with a color design image representing a letter, a symbol, a figure, or the like, comprising, on the resin molded object:

a color design image layer which is porous and to which a coloring agent for representing a color design image is adhered; and

a transparent resin layer which is laminated on the color design image layer while penetrating into a gap of the color design image layer.

13. A decorative molded object according to Claim 12, wherein the color design image layer is obtained by depositing a coloring agent outputted from an output apparatus for collectively outputting color design data onto a porous layer composed of inorganic fine particles bound with each other with a binder resin.

14. A decorative molded object according to Claim 12, wherein the transparent resin layer is a cured layer of an active energy ray curing type resin liquid.

15. A decorative molded object according to Claim 12, wherein the transparent resin layer is a cured layer of a two-liquid curing type resin liquid having a viscosity of 1×10^{-3} Pa·s to 20 Pa·s at 25°C.

16. A decorative molded object according to Claim 12, wherein the resin molded object is made of one of a transparent resin and a semi-transparent resin, and the resin molded object is provided with the color design image layer on a back surface of the resin molded object.

17. A decorative molded object according to Claim 12, wherein one of the resin molded object and the transparent resin layer is provided

with an coloring auxiliary layer for complementing a color such as a metallic color including, a gold color or a silver color or a white color.

18. A decorative molded object according to Claim 12, wherein the resin molded object is a key top main body of a key top for a push-button switch.